Remarks

In view of the above amendments to the claims and the following discussion, the applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 103

1. Claims 1-13 are not unpatentable over Bu

Claims 1-13 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bu (U.S. Patent Publication 2002/0101172 published August 1, 2002). The applicants submit that these claims are not rendered obvious over this reference.

Claim 1 notably recites, that

- all of the emitters of each column *are* current supplied **simultaneously** through a **same** and **single** current supply line (ref. 4 on figs.1 & 2) during **both** emission steps **and** programming steps of the emitters of this column.
- a representative value of the drain current supplying an emitter selected in a column is determined on the basis of the measurement of a representative value of the current flowing through the same and single current supply line of this column that supplies **simultaneously** all of the emitters of the column whatever one of them is in a programming step and the other of the same column are in an emission step.
- for each column of emitters, *there is only* one single separate unit for determining a representative value of the drain current supplying the selected emitter.

Bu (US 2002/0101172), cited by the Examiner, is quoted in the application at page 12, lines 24-36 under the equivalent reference US 6,433,488: "To compensate for the trip-threshold voltages of the TFT transistors of an active matrix, it is known, for example from US document 6 433 488, to use an emitter drive circuit that includes a comparator capable of **comparing** the drain current I_d passing through the modulator with a reference current during a step of programming the drive circuit. However, this circuit requires the implantation of one switching unit **(ref.5)** per emitter in order to switch the current supply source for the emitter between a programming step (current by "DRV" combined with V_{pp} on figure 3) and an emission step (current supplied by V_s) of the emitter. As stated by the Examiner at page 3, lines 4-9 of the Office Action, during the **programming step** "the current flowing through the OLED by the DRV shown in figure 2 (see also figure 3) is in direct relation (through the OLED) to the ground connected through transistor 21". But the Examiner is wrong when he states : "V_s is only supplied during programming" : see quotations below stating that, on the opposite, V_s is NOT supplied during programming BUT only during what is called "emission step".

See Bu at paragraph 19 : "First, as with the prior art, the scan signal and the data signal are input ... *(means that the programming step starts)* in order to activate the second transistor 22 *(activated by the row select means)* Therefore, the third transistor 53 is in an ON mode and the fourth transistor 54 is in an OFF mode ...*(means that the switching unit 5 does not connect the OLED to Vs BUT to the current comparator 6, more precisely to Vpp on figure 3 – Vpp combined with DRV block of figure 3 makes a current supply means)*.. so that a comparison terminal of the current comparator 6 can receive the **driving current I_{OLED} that flows through the OLED 1**"

Second, See Bu at paragraph 22 : "When the aforementioned **programming mode is finished** *(means that the **emission step** starts)*, the scan signal is turned into low level so that the third transistor 53 is in an OFF mode and the fourth transistor 54 is in an ON mode ...*(means that the switching*

*unit 5 now connect the OLED I to Vs which act as **another** current supply means:*.... Therefore, the driving **current I_{OLED}** is input from the supply voltage Vs to the OLED 1".

The Examiner states that "DRV" line is a feedback line and is not related to a current supply line or a current supply means. The applicant considers that, in order to allow the current comparator 6 to receive the **driving current I_{OLED} that flows through the OLED 1 during the programming step,** when the switching unit 5 does NOT connect the OLED I to Vs, such a driving current should anyway be supplied though the OLED by current supply means (see "DRV" on figure 3 combined with Vpp on figure 3 –see paragraph 23) which are different from the other current supply means V_s. Therefore, during programming steps, the current flowing through the OLED is not supplied by the SAME current supply means as during the emission steps.

Therefore, in Bu, two different current supply lines are needed for each column (respectively connected to "DRV" and "Vs" on fig.2 and fig.3), one ("DRV" + Vpp) to supply current through the OLED during the programming steps, and the other one (Vs) to supply current through the OLED during the emission steps, between which the switching unit (ref.5) operates.

With regard to claim 1, Bu describes with respect to FIG. 2 (having similar elements as in FIG. 1) and paragraph 0016, at line 4, an active-matrix image display device comprising:

- several light emitters forming an array of emitters distributed in rows and columns (*see*, Bu at paragraph 0002 and paragraph 0016: "OLED array");
- current supply means (*see*, Bu at paragraph 22: "supply voltage Vs") capable of supplying current to emitters of a column during their emission steps, through a first current supply line of this column, and another current supply means (*see*, Bu at paragraph 23 and Vpp + "DRV" block of FIG. 3) capable of supplying current to successively each emitter of a column during their programming steps, through a second current supply line of this column;

- means for controlling the emission of the emitters comprising:
- for each emitter of the array, a current modulator (*see*, Bu at paragraph 6: transistor 21) comprising a source electrode ("current carrying electrode": 211 or 212), a drain electrode ("current carrying electrode": 212 or 211) and a gate electrode (213), a drain current being able to pass through said modulator in order to supply said emitter, for a voltage between the drain or the source and the gate equal to or greater than a trip-threshold voltage,
- for each modulator, storage means ("capacitor" 23) capable of storing electric charges at the gate electrode of the modulator; and
- for each row of emitters, row select means capable of selecting in succession the emitters of each row of emitters ("scan signal": 3 – transistor 22), for programming these emitters, and
- for each column of emitters, column address means capable of addressing in succession each emitter of said column of emitters by applying, during the programming step of this selected emitter, a value representative of a data setpoint ("data signal") to the gate electrode of the modulator associated with this emitter (*see*, Bu at paragraph 0007),
- trip-threshold voltage compensation means comprising comparators, the comparators being capable of comparing, during the step of programming a selected emitter, a value representative of the drain current supplying the selected emitter with the value representative of the data setpoint for controlling the quantity of charge stored in the storage means.

Bu does not disclose:

a) for each column, a same and single current supply line to supply current to all emitters of this column, whatever these emitters are on programming steps or on emission steps (*see*, Bu at FIG. 2, 3, the switching unit 5 provides a first current supply line to supply "DRV"+ Vpp current, and a second supply line to supply the voltage "Vs" for the emission steps – see also arguments above);

b) one single separate determination unit for each column of emitters, adapted to determine the representative value of the drain current supplying the emitter selected in a column on the basis of the measurement of a representative value of the current flowing through the same and single current supply line of this column for supplying current **simultaneously** to all emitters of this column. More specifically, in **Bu**, even if there would be one single separate determination unit for each column of emitters, this determination unit would be actually capable of determining a value representative of the drain current supplying an emitter selected in this column, BUT on the basis of a measurement of a representative value of the current flowing through the **second** (see above) current supply line "DRV" of this column for supplying **successively** (i.e. according to the "scan signal" actuating the switching means 5) **each** of the emitters of this column (differences are in bold characters).

Even if man skilled in the art would have placed, at the time of the invention, one single separate determination unit (current comparator 6 including Vpp : see figure 3) for each column of emitters, **two different current supply lines** would have been required to connect **successively** DRV+Vpp and Vs in order to supply current through the OLED during successively the programming steps and the emission steps. Therefore, even if man skilled in the art would have placed, at the time of the invention, one single separate determination unit for each column of emitters, man skilled in the art would have NOT reached the invention as claimed.

Consequently, claim 1 is patentable over Bu.

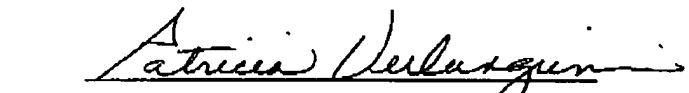
In view of the above arguments, Applicants respectfully submit that claim 1 is patentable over Bu and therefore, claims 2-13 are also patentable based on their dependence upon claim 1.

CONCLUSION

Thus, the applicants submit that none of the claims, presently in the application, are obvious under the provisions of 35 U. S. C. § 103. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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